



ARGUMENT

The examiner is erroneous when states that the claim is being anticipated by the prior art. Claim 1 tells that '...said bearing portion and said outer portion further comprising mating connection means and, for painting, forming a mating connection between said portions having characteristics that ensure fast and tight trapping of the core and that prevent weakening of the sleeve squeezing while painting'. According to the examiner, Claim 1 is anticipated by Thackara (USPN 2766473), Newman (USPN 3745624), and Dezen (USPN 4467509) because similar end units in these claims also form 'mating connections' and therefore claim's language does not reject anticipation of the prior art. This is incorrect.

In the final rejection the examiner correctly states that "'mating connection" does not necessarily mean that the portions are directly connected' and that 'mating connection ... could be a connection of two parts by means of an intermediate member'. However, this is irrelevant to claim's patentability because the examiner erroneously referred to the limitation ('directly connected') that is not present in the accepted version of Claim 1. This limitation was proposed after the Final Action for the sake of clarity, but was considered by the examiner as 'a new limitation that has not been searched and therefore requires further consideration'. The applicant recalled this limitation.

The appellant will prove that (1) the invention is not anticipated by Thackara (USPN 2766473), Newman (USPN 3745624), and Dezen (USPN 4467509) and that (2) the language used to express the invention in Claim 1 adequately represents the basic idea of the invention for any person skilled in the art.

1. The most notorious nuisance related to painting with a roller frame is paint leakage inside the roller frame cage. A removable end unit with a round face is used in several patents including Thackara (USPN 2766473), Newman (USPN 3745624), and Dezen (USPN 4467509) to retain the sleeve on the roller frame cage. This approach significantly reduces leakage by eliminating sleeve sliding that is the primary cause of leakage in conventional roller frames. However, these designs do not eliminate leakage of paint.

The prime goal of my invention is establishing a permanent firm squeeze of the roller sleeve by two end units with round faces (Claim 1) and to further facilitate sealing of the interior of the roller sleeve core with the help of two washes urged to both edges of the core (Claim 2) and a washer on the shaft (Claim 3). Without such squeeze the washes would not work well and leakage could be reduced, but not prevented. No existing patent is capable to provide such squeeze. I will show this for the three patents the examiner mentioned in the final rejection.

Thackara (USPN 2766473), Newman (USPN 3745624), and Dezen (USPN 4467509) are not capable to achieve such squeeze because the two end units in their designs are independently mounted on the shaft (axle, spindle). This is clear from the drawings and is directly stated in all three claims:

- Thackara – 'the cap 16 and the cap 25 are independently mounted on the axle 13'

- Newman – ‘a pair of independent frame units rotatable on a spindle of the paint roller’
- Dezen – ‘an outer end member rotatably located on said shaft adjacent an outer end’.

It is understandable that under such conditions a strong permanent squeeze is either impossible, or would obstruct rotation of the roller cage. Indeed, in Newman’s design the initial squeeze, if applied by a painter, would entirely rely on friction between the inner surface of the core and the rods 30 and 50. This definitely is not sufficient to retain a squeeze during painting. For Thackara’s and Dezen’s designs the shaft is a ‘participant’ in the squeeze. Due to action-reaction forces involved in the urge transfer, rotation friction will be significantly increased and will make rotation of the roller cage obstructed. In Thackara’s case, this is friction between the spring clamp 37 and the hub portion 30 of the cap 25. In Dezen’s case, this is friction between the outer sleeve 64 and the flange 78.

The basic idea of my invention is to connect the end units that squeeze the roller sleeve without any participation from the shaft or the sleeve to avoid the problems explained above. The most practical way is a direct connection of the end units. One method, for example, could be to screw the removable end unit to the permanently mounted unit. Another method could be by usage of a bayonet connection. However, using a screw (‘an intermediate member’) to connect the end units is also a possible (though very impractical) implementation of such connection that would allow squeezing the sleeve.

The best way to understand the difference between the way the two end units are connected in my invention and in Thackara’s, Newman’s, and Dezen’s inventions is to perform an easy mental experiment: imagine that you remove both end units from the shaft and connect them without the sleeve. For my design the end units can be connected the same way as they are connected in the presence of the shaft and the sleeve. For Thackara’s, Newman’s, and Dezen’s claims this is impossible. That is why it is obvious that my invention is not anticipated by Thackara (USPN 2766473), Newman (USPN 3745624), and Dezen (USPN 4467509). This experiment could be considered as a litmus test for a kind of connection that I used in my design. No existing patent with a removable end cap would pass it.

2. The appellant was looking for the best way to explain in the claim the kind of connection of the end units that I need for my invention. One possible approach could be to list various possible implementations. A better way could be to utilize a technical term used in similar situations to cover all possible permutations. There is a proper term, ‘mating connection’, and I decided to use it. Before using the term I researched the Database of Patents and found that since 1976 ‘mating connection’ was used in 249 claims (USPN 6733313, 6722922, 6511102, and others). They always describe two connected parts of an assembly (device, etc.) that would pass the above ‘litmus test’. I believe that it is appropriate to rely on an established technical term and expect that it will be understood and interpreted by any person skilled in the art the same way as it was understood and interpreted in previously registered patents.

No person skilled in the art would ever conclude that in Thackara's (USPN 2766473), Newman's (USPN 3745624), and Dezen's (USPN 4467509) patents corresponding end units alone would form mating connections. On opposite, these patents explicitly state that the end units are independently mounted on the shaft. Without a shaft and a sleeve they would be completely disconnected for all three patents.

At the same time, the language used to express my invention in Claim 1 (in particular, 'said bearing portion and said outer portion further comprising mating connection means and, for painting, forming a mating connection') adequately represents the basic idea of the invention and clearly separates my claim from the three mentioned patents. These wording explicitly tells that the two parts form a mating connection via the mating means they comprise. This definitely excludes the shaft and the sleeve as participants in the connection.

My claim does not insist that any mating connection would be sufficient. It lists additional characteristics of this connection that are required to achieve the ultimate goal of my invention: a practical leakage-proof roller frame. They must 'ensure fast and tight trapping of the core and ... prevent weakening of the sleeve squeezing while painting'. The preferred embodiment described in my patent application satisfies all these requirements. I built a number of working prototypes according to the described implementation that were tested and used for several years. They proved correctness and usefulness of the proposed approach.